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Heart Failure

OBSTRUCTIVE SLEEP APNEA AND ASTHMA CO-MORBIDITIES ARE INDEPENDENT PREDICTORS OF NEW HEART FAILURE AND ATRIAL FIBRILLATION IN PATIENTS WITH DIABETES MELLITUS AND PRESERVED EJECTION FRACTION

ACC Moderated Poster Contributions
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Session Title: Heart Failure Complicated by Anemia or Diabetes Mellitus
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Background: Heart failure (HF) and atrial fibrillation (AF) are twin epidemics with poor prognosis in pts with type 2 diabetes mellitus (T2DM). Obstructive sleep apnea (OSA) is an important correlate of T2DM, but its role in HF+AF is unclear, as is the role of underlying lung disease. We sought to evaluate clinical predictors of new HF and AF in T2DM.

Methods: 914 consecutive T2DM pts (age 56±11y) without prior HF or AF and with a negative stress echo were enrolled in an observational study, after exclusion of prior cardiac surgery, > mild valvular heart disease, or ejection fraction < 50%. Demographics, clinical assessments based on standards of diabetes care, co-morbidities, and treatment with insulin, diuretics, beta-blockers, statins, ace-inhibitors and aspirin were collected at the time of stress echo. Pts were followed for up to 8 y for HF+AF, and best predictors of endpoints were sought by using nested Cox proportional hazard models.

Results: 22 new HF and 25 new AF developed during a mean time of 4.8 y. OSA and asthma were associated with outcome in univariate and all adjusted models (Table), independent of socio-economic class, diabetes care and clinical predictors.

Conclusion: OSA and asthma are associated with HF+AF in T2DM.

Table: Impact of Baseline OSA and Asthma on HF+AF in Cox Models:

	OSA		Asthma	
	Hazard Ratio (95% CI)	p-value	Hazard Ratio (95% CI)	p-value
Univariate	2.3 (1.01-5.04)	0.046	2.3 (1.1, 4.8)	0.037
Multivariate (OSA, Asthma) with:				
Age, gender	2.6 (1.1-5.9)	0.025	2.6 (1.2-5.6)	0.019
Age, gender, race, poverty	2.6 (1.2-6.1)	0.022	2.5 (1.2-5.6)	0.021
Age, gender, ejection fraction, left atrial volume, nonoptimal systolic or diastolic pressure at baseline echo	2.5 (1.1-5.6)	0.034	2.5 (1.1-5.6)	0.022
Age, gender , hypertension, obesity, CAD, resistant hypertension, depression, anxiety, neuropathy, nephropathy	2.5 (1.1-5.7)	0.035	2.5 (1.1-6.0)	0.021
Age, gender, family history, smoking, hypertension, CAD	2.4 (1.04-5.5)	0.039	2.7 (1.2-6.0)	0.013
Age, gender, treatment	2.4 (1.03-5.5)	0.042	2.5 (1.1-5.6)	0.023
Age, Gender, nonoptimal control of diabetes, HDL, triglyceride and creatinine (2011 Diabetes Standards of Medical Care Guidelines)	2.6 (1.1-5.9)	0.0247	2.6 (1.2-5.7)	0.018